

***Quercus prinus* - (*Quercus rubra*) - *Carya* spp. / *Oxydendrum arboreum* - *Cornus florida*
Forest**

COMMON NAME Rock Chestnut Oak - (Northern Red Oak) - Hickory species / Sourwood – Flowering
Dogwood Forest
SYNONYM Appalachian Montane Oak Hickory Forest (Chestnut Oak Type)
PHYSIOGNOMIC CLASS Forest (I)
PHYSIOGNOMIC SUBCLASS Deciduous forest (I.B)
PHYSIOGNOMIC GROUP Cold-deciduous forest (I.B.2)
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (I.B.2.N)
FORMATION Lowland or submontane cold-deciduous forest (I.B.2.N.a)

ALLIANCE *Quercus prinus* - *Quercus rubra* Forest Alliance

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM Upland

RANGE

Globally

This community is known from the southern Blue Ridge escarpment and Piedmont transition areas of Georgia, North Carolina, South Carolina, and Tennessee. It possibly extends into Virginia.

Great Smoky Mountains National Park

This community was sampled on the Cades Cove and Mount Le Conte quadrangles. Historic samples are from the Cades Cove quadrangle and Calderwood quadrangles, but the community is likely in other areas of the Park. On the Cades Cove quadrangle, recent and historic samples representing this community come from elevations ranging from 2000 to 2600 feet. In the northwestern portion of the quadrangle, this community was sampled from the southern and western slopes Arbutus Ridge; the northwest slopes of Stony Ridge; a north-facing draw north of Coon Butt; and from a north-facing upper slope of Boring Ridge. It was also sampled from the northwest slopes above Licklog Creek, west of Mollies Butt. This community was sampled from the eastern half of the Mount Le Conte quadrangle, at elevations ranging from 1400 to 2200 feet. Samples representing this community come from the lower east slope of Potato Ridge; northfacing slopes above the lower Little Pigeon River, north of Grapeyard Ridge; and from the southwest-facing sideridge and upper slopes of Copeland Divide.

ENVIRONMENTAL DESCRIPTION

Globally

This forest occurs on relatively exposed landforms below 3000 feet elevation (1200-2900 feet), on moderately steep to steep, convex, middle to upper slopes and ridges, with mostly northern to southwestern aspects. Some occurrences may have areas of exposed rock.

Great Smoky Mountains National Park

This forest occurs at low elevations, on northern, western, and southwestern, middle to upper slopes. Elevations averaged 2084 feet but ranged from 1650 to 2600 feet.

MOST ABUNDANT SPECIES

Globally

No information

Great Smoky Mountains National Park

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Quercus prinus</i> , <i>Acer rubrum</i> , <i>Carya glabra</i>
Subcanopy	<i>Cornus florida</i>
Herbaceous	<i>Desmodium nudiflorum</i> , <i>Polystichum acrostichoides</i> , <i>Thelypteris noveboracensis</i>

CHARACTERISTIC SPECIES

Globally

Great Smoky Mountains National Park

Quercus prinus, *Acer rubrum*, *Carya glabra*, *Quercus velutina*, *Cornus florida*, *Maianthemum racemosum* ssp. *racemosum*, *Thalictrum thalictroides*

VEGETATION DESCRIPTION

Globally

Canopies are dominated by *Quercus prinus*, often codominating *Acer rubrum*. Other species that can have significant canopy coverage include *Carya glabra*, *Liriodendron tulipifera*, and *Quercus rubra*. The subcanopy is commonly dominated by *Cornus florida*. Additional canopy and subcanopy species can include *Quercus velutina*, *Carya alba*, *Halesia tetraptera* var. *monticola*, *Nyssa sylvatica*, *Robinia pseudoacacia*, *Magnolia fraseri*, and *Oxydendrum arboreum*. The shrub stratum is sparse with no clear dominant. Some typical shrub species include *Gaylussacia ursina*, *Hydrangea arborescens*, *Hydrangea radiata*, *Kalmia latifolia*, *Magnolia fraseri*, *Sassafras albidum*, and, *Vaccinium pallidum*. Common vines are *Smilax rotundifolia*, *Smilax glauca*, *Vitis aestivalis*, *Vitis rotundifolia*, and *Vitis vulpina*. Herb cover is sparse but diverse, and species composition varies between occurrences. Some of the more typical species include *Aster divaricatus*, *Chimaphila maculata*, *Desmodium nudiflorum*, *Dichanthelium* spp. (e.g. *Dichanthelium boscii*, *Dichanthelium commutatum*, *Dichanthelium dichotomum*), *Dioscorea quaternata*, *Galium latifolium*, *Houstonia purpurea*, *Lysimachia quadrifolia*, *Maianthemum racemosum* ssp. *racemosum*, *Polystichum acrostichoides*, *Prenanthes* spp., *Thalictrum thalictroides*, *Thelypteris noveboracensis*, *Uvularia perfoliata*, *Uvularia puberula*, *Uvularia sessilifolia*, and *Viola* spp. (e.g. *Viola blanda*, *Viola hastata*, *Viola palmata*, *Viola tripartita*).

Great Smoky Mountains National Park

The canopy is dominated by *Quercus prinus* and *Acer rubrum*. Other species that can have significant canopy coverage include *Carya glabra* and *Liriodendron tulipifera*. The subcanopy is dominated by *Cornus florida*. Additional canopy and subcanopy species can include *Quercus rubra*, *Quercus velutina*, *Carya alba*, *Halesia tetraptera* var. *monticola*, *Nyssa sylvatica*, *Robinia pseudoacacia*, and *Oxydendrum arboreum*. The shrub stratum is sparse with no clear dominant. Some typical shrub species include *Gaylussacia ursina*, *Sassafras albidum*, *Nyssa sylvatica*, *Oxydendrum arboreum*, *Cornus florida*, and *Magnolia fraseri*. *Pinus strobus* and *Tsuga canadensis* saplings are commonly in the shrub stratum. Herbaceous cover is sparse to moderate but species rich. Species with the highest coverage and constancy are *Desmodium nudiflorum*, *Polystichum acrostichoides*, and *Thelypteris noveboracensis*. Other species with high constancy include *Aster divaricatus*, *Chimaphila maculata*, *Dichanthelium* spp. (e.g. *Dichanthelium commutatum*, *Dichanthelium dichotomum*), *Dioscorea quaternata*, *Maianthemum racemosum* ssp. *racemosum*, *Prenanthes* spp., *Thalictrum thalictroides*, *Uvularia perfoliata*, *Uvularia puberula*, *Uvularia sessilifolia*, and *Viola* spp. (e.g. *Viola blanda*, *Viola hastata*, *Viola palmata*, *Viola tripartita*), but other species may occur. Common vines are *Smilax rotundifolia*, *Smilax glauca*, *Vitis aestivalis*, and *Vitis vulpina*.

OTHER NOTEWORTHY SPECIES

No information

CONSERVATION RANK G4G5

RANK JUSTIFICATION

DATABASE CODE CEGL007267

COMMENTS

Globally

This forest lacks the dense ericaceous shrub layer typical of other *Quercus prinus*-dominated forests in the Blue Ridge escarpment region and commonly has diverse herbaceous composition. It is distinguished from similar forests in the Ridge and Valley by lacking *Acer saccharum* and from Piedmont forests by the lack of *Quercus falcata* and *Quercus stellata*, and by the presence of species more typical of the southern Appalachians (*Magnolia fraseri*, *Halesia tetraptera*, and *Castanea dentata*). This association was originally defined from the Chattooga Basin Project (S. Simon pers. comm.) and later refined with information from the Great Smoky Mountains.

REFERENCES

Nelson 1986, Schafale and Weakley 1990, Simon pers. comm.